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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
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08/970,312 11/14/97 ALLEN D TH0776X

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PM82/0220

EXAMINER

LEE, J

ART UNIT	PAPER NUMBER
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3673

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DATE MAILED: 02/20/01

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary

Application No.

08/970,312

Applicant(s)

ALLEN ET AL.

Examiner

Jong-Suk (James) Lee

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1, 2, and 4-8 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1, 2, and 4-8 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claims ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are objected to by the Examiner.
- 11) ☒ The proposed drawing correction filed on 11 December 2000 is: a) ☒ approved b) ☐ disapproved.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

- 15) ☒ Notice of References Cited (PTO-892)
- 16) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 17) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____.
- 18) ☐ Interview Summary (PTO-413) Paper No(s). ____.
- 19) ☐ Notice of Informal Patent Application (PTO-152)
- 20) ☐ Other:

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DETAILED ACTION

1. The amendment filed on December 11, 2000 has been entered.

Drawings

2. The proposed drawing correction and/or the proposed substitute sheets of drawings, filed on December 11, 2000 have been approved by the examiner.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(f) or (g) prior art under 35 U.S.C. 103(a).

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1 4. Claims 1, 2 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over
2 Horton'467 in view of PCT publication (WO 95/26294), and further in view of Jones.

3 Horton'467 discloses a deep water offshore apparatus comprising of a vertically oriented
4 elongated floating hull (24) with a buoyant upper section; a ballasted lower section (70, 72); a
5 truss member (26) separated the floating hull from the lower ballasted section; an anchoring
6 system (28, 30) connecting the hull to the ocean floor (see Figs.1-3; col.3, lines 22-67; col.4, lines
7 1-62; col.5, lines 3-62).

8 However, Horton'467 fails to disclose or fairly suggest a vertically oriented protective
9 profile section rotatably mounted about the hull. PCT publication (WO 95/26294) discloses a spar
10 platform (1) comprising of: an essentially vertical cylindrical buoyant vessel/hull (7) and a shroud
11 (4) surrounding the vertical vessel/hull (7) and forming an outer wall of the hull (7) as to claim 2
12 in order to be less susceptible to vortex induced vibration (VIV) (see Fig.1; pg.1, lines 29-32;
13 pg.2, lines 1-33).

14 Therefore, in view of PCT publication (WO 95/26294), it would have been obvious to one
15 of ordinary skill in the art at the time the invention was made to have added the shroud to the
16 floating hull of Horton'467 in order to provide less resistance to lateral forces resulting from
17 water current drag.

18 However, the teachings of Horton'467 modified by PCT publication (WO 95/26294) fail
19 to specifically disclose the fairing-shaped profile section as the protective section. Jones discloses

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1 a riser pipe (11) having a vertically oriented fairing (21) mounted on the riser pipe for free
2 rotation about it as to claim 6; the fairing's factors affecting the efficiency of a streamlined form
3 are the ratio of its thickness at its widest portion to its chord or length and the distribution of its
4 thickness along the length of its chord. The range of the ratio is about 30 % for the fairing body
5 (21) (see Fig. 1; col.2, lines 55-68; col.3, lines 1-66; col.4, lines 32-68)

6 Therefore, in view of Jones, it would have been obvious to one of ordinary skill in the art
7 at the time the invention was made to have modified the protective profile section/ shroud of
8 Horton'467 as modified by PCT publication (WO 95/26294) by replacing with the fairing section
9 to the floating hull in order to provide less resistance to enhance the vibration reducing functions
10 of the shroud to the VIV.
11

12 5. Claims 4, 5, 7 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over
13 Horton'467 as modified by PCT publication (WO 95/26294) and Jones, as applied to claims 2
14 and 6, respectively, and further in view of Schuh. The teachings of Horton'467 modified by PCT
15 publication (WO 95/26294) and Jones have been discussed above.

16 However, the teachings of Horton'467 modified by PCT publication (WO 95/26294) and
17 Jones fail to specifically disclose the chord to thickness ratio between about 1.10 and 1.50. Schuh
18 discloses a streamlined riser pipe comprising of a "ultra-short" fairing assembly (18-22) inherently
19 having the chord to thickness ratio being in the range of 1.10 and 1.50 as depicted in Fig.2 (see

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1 Figs. 1-2; col. 2, lines 33-69; col.3, lines 23-35).

2 Therefore, in view of Schuh, it would have been obvious to one of ordinary skill in the art
3 at the time the invention was made to further modify the fairing of Horton'467, as modified by
4 PCT publication (WO 95/26294) and Jones, by incorporating the ultra short fairing shape to the
5 fairing as taught by Schuh in order to provide the advantage of having a much lower drag
6 coefficient wherein, the lower drag coefficient, the lower the resistance of the cylindrical floating
7 hull to fluid flow.

8
9 *Response to Arguments*

10 6. Applicant's arguments with respect to claims 1, 2 and 4-8 have been considered but are
11 moot in view of the new ground(s) of rejection.

12
13 *Conclusion*

14 7. The prior art made of record and not relied upon is considered pertinent to applicant's
15 disclosure: Allen et al. '524 disclose a staggered fairing system for suppressing Vortex Induced
16 Vibration; Ayers et al. disclose a spar platform having a shroud surrounding the buoyant hull;
17 Morgan et al. disclose a means employing hydro-jets for facilitating the clearing of disaggregated
18 ice chunks from the cutting region having a fairing shaped hull; Berry et al. disclose operations
19 vessel for ice covered seas having a fairing shaped buoyant hull.

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1 8. Any inquiry concerning this communication or earlier communications from the examiner
2 should be directed to Jong-Suk (James) Lee whose telephone number is (703) 308-6777. The
3 examiner can normally be reached between the hours of 6:30 AM to 3:00 PM Monday thru
4 Friday. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor,
5 David J. Bagnell, can be reached on (703) 308-32151. The fax phone number for this Group is
6 (703) 305-3597.

7 Any inquiry of a general nature or relating to the status of this application or proceeding
8 should be directed to the Group receptionist whose telephone number is (703) 308-2168.
9

10 Jong-Suk (James) Lee JL

11 February 13, 2001


DAVID BAGNELL
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 3600